

<b>Notice of Allowability</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	10/777,326	LUTZ ET AL.	
	<b>Examiner</b>	<b>Art Unit</b>	
	David S. Blum	2813	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--**

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to 3/1/06.
2. ☒ The allowed claim(s) is/are 9-36.
3. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
  - a) ☐ All    b) ☐ Some\*    c) ☐ None    of the:
  1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

\* Certified copies not received: \_\_\_\_\_.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

**THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.**

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
  5. ☐ CORRECTED DRAWINGS ( as "replacement sheets") must be submitted.
    - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review ( PTO-948) attached
      - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date \_\_\_\_\_.
    - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date \_\_\_\_\_.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

**Attachment(s)**

- |   |   |
|---|---|
| <ol style="list-style-type: none"> <li>1. <input type="checkbox"/> Notice of References Cited (PTO-892)</li> <li>2. <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)</li> <li>3. <input type="checkbox"/> Information Disclosure Statements (PTO-1449 or PTO/SB/08),<br/>Paper No./Mail Date _____</li> <li>4. <input type="checkbox"/> Examiner's Comment Regarding Requirement for Deposit<br/>of Biological Material</li> </ol> | <ol style="list-style-type: none"> <li>5. <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)</li> <li>6. <input checked="" type="checkbox"/> Interview Summary (PTO-413),<br/>Paper No./Mail Date <u>6/19/06</u>.</li> <li>7. <input checked="" type="checkbox"/> Examiner's Amendment/Comment</li> <li>8. <input checked="" type="checkbox"/> Examiner's Statement of Reasons for Allowance</li> <li>9. <input type="checkbox"/> Other _____.</li> </ol> |
|---|---|

This is in response to the amendment filed 3/1/06.

### **EXAMINER'S AMENDMENT**

1. An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.
2. Authorization for this examiner's amendment was given in a telephone interview with Neil A. Steinberg on 6/19/06.

The application has been amended as follows:

Please replace claims 9, 16, and 23-25 as with the following amended claims.

Claim 9. A microelectromechanical device comprising:  
a substrate;  
a mechanical structure disposed over the substrate, wherein at least a portion of the mechanical structure is disposed in a chamber;  
a fluid disposed in the chamber;  
a periphery area disposed over the substrate, wherein the periphery area includes a plurality of gaps therein, wherein the plurality of gaps is disposed in the chamber and exposed to the fluid; and  
a thin film encapsulation structure, disposed over the mechanical structure and the periphery area, to partially define and seal the chamber, wherein the fluid is contained in the chamber after the chamber is sealed.

Claim 16. A microelectromechanical device comprising:  
a substrate;  
a mechanical structure disposed over the substrate wherein the mechanical structure includes moveable and fixed electrodes;  
a periphery area disposed over the substrate;

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a getter area comprising a plurality of gaps, wherein the plurality of gaps is disposed in predetermined portions of the periphery area and the fixed electrode;  
 a chamber, wherein at least a portion of the mechanical structure and the getter area are disposed in the chamber, and wherein the getter area is exposed to fluid in the chamber; and  
 a thin film encapsulation structure, disposed over the mechanical structure, the periphery area and the getter area, wherein the thin film encapsulation structure seals the chamber, and wherein the fluid is contained in the chamber after the chamber is sealed.

Claim 23. A microelectromechanical device comprising:

a substrate;  
 a mechanical structure disposed over the substrate, wherein at least a portion of the mechanical structure is disposed in a chamber;  
 a fluid disposed in the chamber;  
 a periphery area disposed over the substrate, wherein the periphery area includes a plurality of gaps, wherein the plurality of gaps is disposed in the chamber and exposed to the fluid therein;  
 a thin film encapsulation structure, disposed over the mechanical structure and the periphery area, to partially define and seal the chamber, wherein the fluid is contained in the chamber after the chamber is sealed, and wherein the thin film encapsulation structure includes:

a first encapsulation layer comprising polycrystalline silicon, porous polycrystalline silicon, amorphous silicon, silicon carbide, silicon nitride, silicon/germanium, germanium, or gallium arsenide; and  
 a second encapsulation layer, disposed on or over the first encapsulation layer, the second encapsulation layer comprising polycrystalline silicon, porous polycrystalline silicon, amorphous silicon, germanium, silicon/germanium, gallium arsenide, or silicon carbide.

Claim 24. The device of claim 23 wherein the mechanical structure includes at least one fixed electrode, wherein the at least one fixed electrode includes a plurality of gaps therein, and wherein the plurality of gaps in at least one fixed electrode is disposed in the chamber and exposed to the fluid.

Claim 25. The device of claim 23 wherein the mechanical structure includes at least one anchor region, wherein the at least one anchor region includes a plurality of

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gaps therein, and wherein the plurality of gaps in at least one anchor region is disposed in the chamber and exposed to the fluid.

***Reasons for Allowance***

3. Claims 9-36 are allowed.

4. The following is an examiner's statement of reasons for allowance:

Claims 9, 16, and 23 limit the microelectromechanical device to having gaps in the periphery area that are exposed to a gas that is enclosed in the encapsulation structure. This limitation, in combination with the other limitations of claims 9, 16, and 23 is not taught or suggested by the prior art of record.

Bosch (WO 01/77009), Offenberg (WO 01/77008), Sakai (US006450029B1) and Kato (US006240782B1) do not teach gaps in the periphery area that are exposed to a gas that is enclosed in the encapsulation structure.

Claims 10-15 and 31-32 are allowed as being properly dependent upon allowed claim 9.

Claims 17-22 and 33-34 are allowed as being properly dependent upon allowed claim 16.

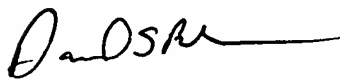
Claims 24-30 and 35-36 are allowed as being properly dependent upon allowed claim 23.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to David S. Blum whose telephone number is (571)-272-1687) and e-mail address is [David.blum@USPTO.gov](mailto:David.blum@USPTO.gov) .

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Carl Whitehead Jr., can be reached at (571)-272-1702. Our facsimile number all patent correspondence to be entered into an application is (571) 273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



David S. Blum

June 21, 2006